

REMARKS

Favorable reconsideration of this application is requested in view of the following remarks.

Claim 1 has been amended to include the limitations of claim 5.

Non-elected claims 10-15 have been canceled without prejudice.

Claims 1-9 have been rejected under 35 U.S.C. 102 (b) as anticipated by or, in alternative, under 35 U.S.C. 103 (a) as obvious over Negami et al., and relying on supporting evidence in Sheng et al. Applicants respectfully traverse this rejection.

Applicants understand that Negami is US Patent No. 6259016 attached to the Information Disclosure Statement dated March 11, 2004. Negami disclosed a general formula of an oxide $Zn_{1-x}A_xO$, in a layer of a semiconductor where A is at least one of Be, Mg, Ca, Sr, and Ba (see coln. 5, lines 46-50). Applying the general formula shown above, a formula of such oxide that has both Mg and Ca would be expressed as $Zn_{1-x}(Mg, Ca)_xO$, wherein "x" shows the total content of Mg and Ca in the oxide. In such an oxide, the Mg content is always less than "x" because it is reduced by the content of Ca. In contrast, claim 1 has the relationship $Zn_{1-x}Mg_xO$ regardless of the content of Ca or other atoms listed as M in claim 1. In addition, Negami discloses changes of properties of $Zn_{1-x}Mg_xO$ layers having different content ratios of Mg (see Figs. 9, 10, and 12) but does not disclose or suggest change of properties of the layers when an oxide including other atoms such as Ca, Sr or Ba are used with Mg and does not disclose an example of a layer having an oxide including both Mg and at least one of such atoms. The present invention, however, shows significant increase of energy conversion efficacy when the M atom such as Ca is used with Mg as required by claim 1 (see Table 1 of the specification). Therefore, claim 1 is distinguished from Negami and is not suggested by this reference. Accordingly, the rejection of claims 1-4 and 6-9 should be withdrawn.

In view of the above, Applicants request reconsideration of the application in the form of a Notice of Allowance.



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DPM/my

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